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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,064	12/13/2004	Derek Anthony Eastham	HGF P-4002-1	3477
29318	7590	12/05/2005	EXAMINER	
JAMES D. STEVENS REISING, ETHINGTON, BARNES, KISSELLE, P.C. P.O. BOX 4390 TROY, MI 48099			HASHMI, ZIA R	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/518,064	EASTHAM, DEREK ANTHONY	
	Examiner	Art Unit	
	Zia R. Hashmi	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/13/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. A "Preliminary Amendment" was received on December 13, 2004. Claims 1-3, 5-6, 8-12, and 14-17 have been amended, as indicated.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-17 are rejected under U.S.C. 103(a) as being unpatentable over Chang et al. (6,023,060), in view of Lee et al. (6,281,508).

4. With respect to independent claim 1, and dependent claims 8-9 & 11-14, Chang et al. disclose a particle beam generator or microcolumn (Abstract, line 1), comprising an extracting plate, having an extracting aperture, disposed adjacent a particle source and operable to extract particles from such a source into the extracting aperture to form a particle beam (col. 2, lines 18-24 and 50, 52, 54 in Fig. 3), characterized in that at least one of the extracting aperture and the accelerating means inhibits lateral expansion of the particle beam to provide a near parallel particle beam having a diameter less than 100 nm (col. 1, lines 56-59 and 10 in Fig. 1). It is understood that the wording "...inhibits lateral expansion of the particle beam..." in independent claim 1 simply refers to near parallel collimation of the particle beam due to narrow hole in the

extracting aperture and appropriate focusing of the particle beam, which prevents the beam from lateral expansion.

5. With respect to claims 1-7, 10, and 15-17, Chang et al. fail to disclose specifically details of particle acceleration components, like microlenses and microcolumns of a particle beam generator. Lee et al., however, disclose a 1 kV particle beam generator with details of its microcolumns and microlenses components, which form the charged particle acceleration and focusing electronics (col. 1, lines 24-67, col. 2, lines 4-6, col. 4, lines 11-27, col. 6, claim 2, col. 7 & 8, claim 15, and Fig. 4a-4d).

Thus, it would have been obvious to one having ordinary skill at the time of the invention was made to combine the methods and apparatus of Chang and Lee et al., because Lee et al. teach (col. 1, lines 19-23) that electron beam microcolumns offer The advantage of extremely high resolution, small physical size, low cost, and can be used in a variety of applications.

Conclusion

6. Adamec et al. disclose (US 2004/0169141 A1) a charged particle beam apparatus and method of operating it in different modes.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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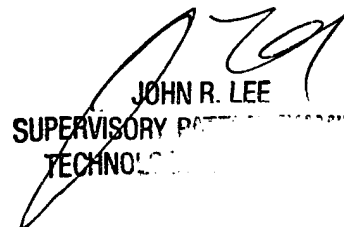
have questions on access to the Private PAIR system, contact Electronic Business Center (EBC) at 866-217-9197 (toll-free).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zia Hashmi whose telephone number is (571) 272-2473.

The examiner can normally be reached between 8.30 AM- 5 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477.

Zia Hashmi

November 26, 2005.


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY